

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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| 09/929,716 | 08/31/2001 | Antoine J. Rouphael | 2001P14769US |

REPLY TO OFFICE ACTION AND
REQUEST FOR RECONSIDERATION

| EXAMINER | |
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| Aghdam, Freshen N. | |
| ART UNIT | PAGE NUMBER |
| 2611 | 5 |

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AMENDMENTS TO THE CLAIMS

In the Claims, please make the following amendments:

1. (Currently Amended) A method for reducing intersymbol interference in a telecommunications system, comprising:
 - specifying an initial shaping filter,
 - determining a level of intersymbol interference ~~for~~ of a final shaping filter where said final shaping filter is obtained by ~~further~~ processing signals associated with said initial shaping filter, ~~said determining~~ including generating a white noise data sequence for and using said white noise data sequence to in a model of modeling channel noise and intersymbol interference; and
 - updating final shaping filter coefficients at optimal sampling points other than every sample iteratively until the intersymbol interference is at or below a desired level; and
 - configuring a transmit filter of a radio frequency communications system with said final shaping filter coefficients.
2. (Original) A method in accordance with claim 1, wherein said optimal sampling points are at a sampling period.
3. (Currently Amended) A method in accordance with claim 2, wherein said initial shaping filter is ~~obtained~~ specified by performing a convolution on a signal associated with a given filter, with certain spectral and time domain characteristics, with ~~its~~ a signal associated with a matched complex counterpart of said given filter.
4. (Currently Amended) A method, comprising:
 - specifying a given filter with certain time domain and spectral characteristics,
 - obtaining a matched filter counterpart of said given filter;
 - performing a convolution between a signal associated with said given filter and a signal associated with said matched filter to obtain an initial shaping filter;

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generating a noise data sequence, said data sequence comprising a channel noise and intersymbol interference model;

convolving said data sequence with said signal associated with said given filter; and deriving a specification of an optimized shaping filter responsive to said convolving by adaptively minimizing an error metric at points on said initial shaping filter corresponding to optimal sampling points other than every sample thus producing a signal with minimal ISI period; and

configuring a transmit filter of a radio frequency communications system with coefficients associated with said optimized shaping filter.

5. (Original) A method in accordance with claim 4, said error metric comprising a least mean squares error metric.
6. (Currently Amended) A telecommunications device, comprising:
a coder for adapted to encoding encode data;
an RF modulator; and
a shaping filter for shaping adapted to shape said coded-encoded data,
the shaping filter generated-specified by constraining the filter coefficients in their adaptation at the optimal sampling point-points and not constraining them said filter coefficients at points other than optimal sampling points, an initial shaping filter comprising a channel noise model filter and intersymbol interference shaping filter, said intersymbol interference shaping filter adapted to for minimizing minimize intersymbol interference, coefficients for said initial shaping filter derived-specified based upon from a matched filter and data sequence.
7. (Currently Amended) A telecommunications device in accordance with claim 6, said shaping filter derived-specified from-based upon a convolution between a-a signal associated with said initial shaping filter and its-a corresponding signal associated with said matched filter.

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8. (Original) A telecommunications device as recited in claim 7, wherein said constraining is iteratively performed until an error metric reaches a steady state minimum level.
9. (Original) A telecommunications device as recited in claim 8, wherein said constraining is iteratively performed until an error metric reaches a predetermined threshold level.
10. (Currently Amended) A method, comprising:
 - specifying an initial filter;
 - first convolving a signal associated with said initial filter with its a complex conjugate of said signal to obtain a specification of an initial shaping filter;
 - second convolving said signal associated with said initial filter with a noise data sequence, said noise data sequence comprising a channel noise and intersymbol interference model; and
 - deriving, responsive to said first convolving and second convolving, a specification of a shaping filter by minimizing an error metric at points on said signal associated with said initial shaping filter corresponding to an upsampling period, the upsampling period comprising optimal sampling points other than every sampling point; and
 - configuring a transmit filter of a radio frequency communications system with coefficients based upon said specification of said shaping filter.
11. (Currently Amended) A method as recited in claim 10, wherein said deriving comprises constraining ~~the~~ filter coefficients in their adaptation at ~~the~~ optimal sampling ~~point~~ points and not constraining them at ~~the~~ non-sampling points.